***Informal vs. Formal Language and Vocabulary***

The table below lists some examples of informal language used by students to describe

mathematical ideas. The proceeding column lists the corresponding formal mathematical

vocabulary:

|  |  |
| --- | --- |
| **Informal Vocabulary** | **Formal Mathematical**  **Vocabulary** |
| Split  Take away  Slide  Turn  Flip  Change  Same  More  Less  Holds  Inside  Around  Cross  Total | Divide  Subtract  Translation  Rotation  Reflection  Transformation  Congruent/Equal  Greater  Fewer  Capacity  Interior/ Area  Perimeter  Intersection  Sum |

**Frayer Model**

The Frayer Model is a word categorization activity that helps learners develop their understanding of concepts. Students provide a definition, list characteristics or facts, and provide examples and non-examples of the concept. There are many concepts in mathematics that can be confusing because of their close relationships (e.g. prime numbers and factors) and/ or their specialized features (e.g. functions). This strategy provides students with the opportunity to understand what a concept is and what it is not. It gives students and opportunity to communicate their understanding and to make connections by providing examples and non-examples from their own experiences with the concept.

How to use it:

1. Take a concept that might be confusing because of its relational qualities.

2. Explain the Frayer model diagram.

3. Model how to fill out the diagram by asking for items to list in the “examples” section. Then ask for non-examples. By referring to the examples & non-examples, ask students what facts or characteristics might be given about the term. Finally, ask students to use all the information discussed to come up with a group definition of the term.

4. When students are familiar with the diagram, let them practice with assigned terms.

5. Once their diagrams are completed, let the students share their work with other students. Display students’ diagrams as posters throughout the unit so students can refer to the words and continue to add ideas.

**Examples**

• Rectangle

• Triangle

• Pentagon

• Trapezoid

• Hexagon

**Facts/Characteristics**

• Closed

• Simple (curve does

not intersect itself)

• Plane figure (2D)

**Non-examples**

• Circle

• Cone

• Arrow (ray)

• Cube

• Letter A

**Definition** (In your own

words)

A simple, closed, plane

figure made up of three

or more line segments